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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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TECHNOLOGY CENTER 2800

#7

Response

J. Macmillan

1/15/03

First Named  
Inventor : Baowei KANG et al.  
Appln. No. : 10/017,734  
Filed : December 7, 2001  
Title : POWER SEMICONDUCTOR SWITCHING  
DEVICES WITH LOW POWER LOSS AND  
METHOD FOR FABRICATING THE  
SAME  
Docket No. : B784.312-1

Group Art Unit: 2826

Examiner: M.L. Tran

## RESPONSE

Box Non-Fee Amendment  
Assistant Commissioner for Patents  
Washington, D.C. 20231

SENT VIA EXPRESS MAIL

Express Mail No.: EV 168042531

Sir:

This is in response to the Office Action mailed on September 25, 2002.

### IN THE CLAIMS

The presently pending claims 1-7 are provided for the Examiner's ease of reference as follows:

1. A low-power-loss power semiconductor switching device comprising an n-type base, a backside p<sup>+</sup> emitter and general frontside structure including a cathode and a gate, wherein said switching device includes a combination of an ultra thin and lightly-doped backside p<sup>+</sup> emitter formed by ion implanting and a nonuniformly doped n-type base which contains a residual layer of a priorly-diffused n<sup>+</sup> layer on one side of the device.
2. The method as defined in claim 6 wherein the thickness of the backside p<sup>+</sup> emitter is approximately between 0.2 and 1  $\mu\text{m}$ .